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TITLE : ACTIVE MATERIAL FOR LITHIUM BATTERY

ABSTRACT : PROBLEM TO BE SOLVED: To enhance capacity by constituting an active material of Li, Cu, P and O elements of the specific ratio.

SOLUTION: An active material is expressed by a chemical formula ($\text{LiCu}_{1-x}\text{PO}_4$). Here, ($0 \leq x \leq 1$) is realized. In this active material, a crystal system is an orthorhombic system in ($0.5 < x < 1$), and a unit lattice constant of its crystal lattice is ($a = 5.31 \pm 0.5$, and $b = 13.43 \pm 0.5$ and $c = 4.91 \pm 0.5$) in an angstrom unit. Such an active material is manufactured by heating it in two stages at 450°C , then, at 800°C after pressurizing/molding them into a pellet shape under pressure of 400 kgf/cm^2 by mixing them in the stoichiometric ratio of Li_2CO_3 , CuO and $(\text{NH}_4)_2 \text{HPO}_4$. A battery is composed of a positive electrode having this active material, an electrolyte and a negative electrode being Li, an Li alloy, Li_xSnO_2 , carbon and/or a graphite material. To put it concretely, a battery having high capacity such as 600 mAh/g is obtained.

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